EPR-SR
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STATEMENT OF WORK FOR REMEDIAL INVESTIGATION/FEASIBILITY STUDY LIBBY ASBESTOS SITE OPERABLE UNIT 3

1. INTRODUCTION

The purpose of the remedial investigation/feasibility study (RI/FS) for Operable Unit 3 (OU3) of the Libby Asbestos Site (the Site), is to investigate the nature and extent of contamination within the OU3 boundaries and to develop and evaluate potential remedial alternatives for OU3.

EPA established preliminary study area boundaries for the purpose of planning and developing the initial scope of the RI/FS for OU3. The preliminary boundaries include the former vermiculite mine and the surrounding geographic area that may have been impacted by current and/or historical releases from the mine. EPA will determine the final OU3 boundaries based on the information generated during the RI/FS.

2. PURPOSE OF THE STATEMENT OF WORK

This Statement of Work (SOW) sets forth requirements for conducting an RI/FS at OU3 of the Site. The Respondents shall conduct the RI/FS in accordance with this SOW and the requirements in the Administrative Settlement Agreement and Order on Consent for Remedial Investigation/Feasibility Study (Administrative Order) and consistent with the National Contingency Plan (40 CFR Part 300) and "Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA" (OSWER Directive 9355.3-01, October 1988) and any other guidance documents that EPA identifies as relevant to any aspect of conducting an RI/FS for OU3. A list of the primary guidance documents is included as Attachment A to this SOW.

EPA will develop all Sampling and Analysis Plans (SAPs), perform all data validation, and conduct the baseline human health risk assessment and ecological risk assessment components of the RI. EPA will provide copies of draft SAPs and draft baseline human health and ecological risk assessment reports to the Respondents. Respondents shall provide written comments on these draft documents to EPA within 30 days of document receipt. EPA will take Respondents' comments into consideration when finalizing the document but is not obligated to provide written responses.

As specified in CERCLA Section 104(a) (1), as amended by SARA, EPA will provide oversight of the Respondents' activities throughout the RI/FS. The Respondents shall support EPA's initiation and conduct of oversight activities. EPA's determinations, approvals, and activities as provided for in the Administrative Order and in the SOW shall be conducted in consultation with the State as provided for by CERCLA, the National Contingency Plan, and applicable guidance.

K. Adams
EPR-SR
8/4/2007

Performance of the work described in this SOW by the Respondents and EPA's review and approval of documents and activities described in this SOW shall be performed in accordance with the procedures described in the Administrative Order. The Respondents shall furnish all necessary personnel, materials, and services needed or incidental to, performing the work described in this SOW, except as otherwise specified in the Administrative Order.

3. INITIAL PLANNING FOR THE REMEDIAL INVESTIGATION

3.1 Assemble Existing Information

The Respondents shall assemble existing information relevant to the RI/FS for OU3 including but not limited to:

- All documentation and reporting of historical operations activities and studies concerning the former vermiculite mine and contaminants associated therewith,
- All mine reclamation plans and reports,
- All environmental sampling and analysis plans,
- All environmental and other data, maps and photos, and
- All reports describing data summaries, data evaluations, or interpretations of data.

This shall include available data relating to the types and quantities of hazardous substances, pollutants, or contaminants within OU3 and past material management and disposal practices at the former vermiculite mine.

The Respondents shall provide the information to EPA and the State in accordance with the schedule contained in Section 10 of this SOW.

3.2 Conduct Field Visit

The Respondents shall conduct a field visit of OU3 during the project scoping phase to assist in developing a conceptual understanding of sources and areas of contamination as well as potential exposure pathways and receptors at OU3. The Respondents shall invite EPA and the State to participate in the field visit and shall provide at least two weeks notice of the proposed date. EPA may invite other interested agencies to participate in the field visit.

3.3 Project Scoping Summary

Based on review of the existing information and the field visit, EPA will develop preliminary problem statements, conceptual site models of potential exposure pathways and potential human health and ecological receptors, preliminary remedial action objectives, and a preliminary list of potential State and federal ARARs in a project scoping summary document.

4. COMMUNITY RELATIONS

EPA will develop and implement community relations activities for OU3. The Respondents shall, as requested by EPA, assist EPA by providing information regarding the Site and/or OU3 history, participating in public meetings, developing graphics, placing newspaper ads developed by EPA, or distributing fact sheets developed by EPA. All Respondents-conducted community relations activities will be subject to oversight by EPA.

5. SITE CHARACTERIZATION

The overall objective of site characterization is to describe the nature and extent of contamination within OU3 and to describe areas of OU3 that may pose a threat to human health or the environment. The Respondents shall perform the activities described in this section including:

- Implement EPA-prepared SAPs;
- Document field activities;
- Arrange for the laboratory analysis of samples at laboratories specified by EPA and in accordance with the EPA-approved SAPs;
- Deliver laboratory data to EPA in the format specified in the SAPs;
- Prepare summary reports for each phase of investigation; and
- Prepare a draft and final RI report.

The Respondents shall notify EPA at least two weeks in advance of field work starting for each phase of the RI and shall provide a monthly progress report and participate in meetings at EPA's request. The Respondents shall notify EPA in writing upon completion of field activities for each phase of the RI.

5.1 Development and Implementation of Sampling and Analysis Plans

EPA will develop a SAP for each phase of the RI. It is anticipated that there will be multiple phases of the RI, the number of phases required will be determined by EPA. The SAP for each phase of the RI will include a description of the goals for the specific phase, a list of key personnel and responsibilities, Data Quality Objectives (DQOs), a Field Sampling Plan (FSP), a Quality Assurance Project Plan (QAPP), a data management plan and a schedule. Each FSP will describe the sampling program including the rationale, number, type, and location of samples; the sample collection, handling and custody procedures; the required field documentation and the required analytical methods. Each QAPP will describe the measures necessary to generate data of sufficient quality to achieve the DQOs. The QAPP will contain details of any special training requirements and certifications, quality control requirements for field activities and analytical processes, and data validation requirements.

The Respondents shall prepare a Health and Safety Plan (HSP) specific to the activities in OU3 and submit it to EPA and the State. The Respondents are solely responsible for

ensuring the health and safety of their employees or contractors performing any of the work described in this SOW. The Respondents shall obtain access to properties for sampling and shall implement each final EPA-approved SAP in accordance with the schedule described in the SAP. The Respondents shall arrange for analytical data from laboratories to be reported directly to EPA in the format specified by EPA in the SAP. EPA will perform all required data validation described in the SAP.

The Respondents shall consistently document and adequately record in well maintained field logs and laboratory reports, information gathered during site characterization. The method(s) of documentation shall be consistent with that specified in the SAP. The Respondents shall use field logs to document observations, measurements, and significant events that occur during field activities. The Respondents shall ensure that laboratory reports document sample custody, analytical responsibility, analytical results, adherence to prescribed protocols, nonconformity events, corrective measures, and/or data deficiencies.

The Respondents shall maintain field reports and sample shipment records. Analytical results developed under the SAPs shall not be included in any site characterization summary reports or RI reports unless accompanied by or cross-referenced to a corresponding QA/QC report. In addition, the Respondents shall establish a data security system to safeguard field logs, field data sheets, laboratory reports, chain of custody forms and other project records to prevent loss, damage, or alteration of project documentation. The Respondents shall submit a written description of the data security system to EPA and the State for review and EPA approval in accordance with Section X of the Administrative Order.

5.2 Summary Reports

For each phase of the RI, the Respondents shall prepare a summary report describing the implementation of the SAP. Each summary report shall include the field documentation specified in the SAP, a description of the physical characteristics of the study area, results of all required field quality control procedures, and results of all field and laboratory audits performed by the Respondents as specified in the SAP. The Respondents shall submit a summary report for each phase of sampling to EPA and the State for review in accordance with Section X of the Administrative Order and the schedule established in the EPA-prepared final SAP for that phase.

5.3 RI Report

After the SAP for the final phase of the RI has been implemented, the Respondents shall prepare and submit a draft RI report to EPA and the State for review and EPA approval in accordance with Section X of the Administrative Order and the schedule contained in Section 10 of this SOW. The RI report shall summarize results of field activities to characterize OU3, the sources of contamination, the nature and extent of contamination and the fate and transport of contaminants. The Respondents shall refer to Table 3-13 in "Guidance for Conducting Remedial Investigations and Feasibility Studies under

CERCLA", OSWER Directive 9355.3-01, October 1988 for a suggested RI report format with the exception that EPA will prepare the baseline human health risk assessment and the baseline ecological risk assessment.

Within the RI report, the Respondents shall analyze and evaluate the data to describe the following:

- Physical and biological characteristics of OU3,
- Contaminant source characteristics,
- Nature and extent of contamination, and
- Contaminant fate and transport.

The RI report will include the actual and potential magnitude of releases from the sources, and horizontal and vertical spread of contamination as well as mobility and persistence of contaminants. Where modeling is appropriate, such models shall be identified in a letter submitted to EPA and the State for review and EPA approval prior to their use. All data and programming, including any proprietary programs, shall be made available to EPA and the State. Also, this evaluation shall provide any information relevant to OU3 characteristics necessary for the development and evaluation of remedial alternatives.

5.4 Remedial Action Objectives

EPA, in consultation with the State, will develop remedial action objectives and a refined list of potential State and federal ARARs based on the information provided in the final EPA-approved RI report and the baseline human health risk assessment and ecological risk assessment prepared by EPA.

6. DEVELOPMENT AND SCREENING OF REMEDIAL ALTERNATIVES

The Respondents shall perform the following activities to complete the development and screening of remedial alternatives.

6.1 Develop General Response Actions

The Respondents shall develop general response actions that will satisfy the remedial action objectives developed by EPA in consultation with the State. General response actions may include treatment, containment, excavation, extraction, disposal, institutional controls, or a combination of these.

For each environmental medium for which remedial action objectives have been developed by EPA in consultation with the State, the Respondents shall make an initial determination of areas or volumes to which general response actions may apply, taking into account OU3 conditions, the nature and extent of contamination, and acceptable exposure levels and potential exposure routes identified in the remedial action objectives.

6.2 Identify and Screen Remedial Technology Types and Process Options

The Respondents shall identify and evaluate remedial technology types and process options applicable to each general response action. The term "technology types" refers to general categories of technologies. The term "process options" refers to specific processes within each technology type. Several broad technology types may be identified for each general response action and numerous technology process options may exist within each technology type.

The Respondents shall use information from the RI on contaminant types and concentrations and OU3 characteristics to screen out technologies and process options that cannot be effectively implemented at OU3. The Respondents shall document the results of the initial screening of technology types and process options. The Respondents shall refer to Figures 4-4 and 4-5 in the "Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA", OSWER Directive 9355.3-01, October 1988 for examples of figures that may be used to summarize the initial screening of technologies and process options and the evaluation of process options.

6.3 Assemble and Document Alternatives

The Respondents shall assemble selected representative technologies into alternatives that represent a range of treatment and containment combinations that will address the remedial action objectives for OU3. The Respondents shall specify the reasons for eliminating alternatives during the preliminary screening process.

6.4 Alternative Screening and Selection of Alternatives for Detailed Analysis

The Respondents shall perform a screening of each remedial alternative based on effectiveness, implementability, and cost. As appropriate, the screening will preserve the range of treatment and containment alternatives that was initially developed. The range of remaining alternatives will include options that use treatment technologies and permanent solutions to the maximum extent practicable.

6.5 Development and Screening of Alternatives Technical Memorandum

The Respondents shall prepare a technical memorandum summarizing the work performed in the development and screening of alternatives and the results of each subtask described in this section including:

- A description of the general response actions and the areas or volumes of contaminated media to which they apply,
- A description of the remedial technology types and process options applicable to each general response action,

- The results of the initial screening of remedial technology types and process options,
- A description of the remedial alternatives,
- The results of the screening of alternatives based on effectiveness, implementability, and cost,
- A description of the alternatives that remain after screening and the action-specific State and federal ARARs for each alternative.

The Respondents shall submit the technical memorandum to EPA and the State for review and EPA approval in accordance with Section X of the Administrative Order and in accordance with the schedule contained in Section 10 of this SOW.

7. TREATABILITY STUDIES

EPA may require the Respondents to perform treatability studies to provide sufficient data to allow treatment alternatives to be fully developed and evaluated during the feasibility study and/or to reduce the cost and performance uncertainties for treatment alternatives to levels sufficient to allow EPA to select a remedy.

7.1 Letter Report

The Respondents shall identify a range of candidate technologies for treatability studies based on the remedial action objectives and the list of potential State and federal ARARs and taking into consideration the final results of the development and screening of alternatives. The Respondents shall describe the candidate technologies in a letter report submitted to EPA and the State for review and EPA approval in accordance with Section X of the Administrative Order and the schedule contained in Section 10 of this SOW.

Within the letter report, the Respondents shall present information on performance, relative costs, removal efficiencies, operation and maintenance requirements, and implementability of the identified candidate technologies. If the existing data on OU3 and the available information on candidate technologies are not sufficient to evaluate alternatives in the detailed analysis of alternatives, EPA may require treatability studies to be performed by the Respondents.

7.2 Treatability Studies Work Plan

Where EPA has determined that treatability studies are required, and unless the Respondents can demonstrate to EPA's satisfaction that they are not needed, the Respondents shall submit a draft treatability study work plan to EPA and the State for review and EPA approval in accordance with Section X of the AOC and the schedule contained in Section of 10 of this SOW. The work plan shall describe the type of treatability study to be performed (e.g., bench scale or pilot scale) and shall include:

- a discussion of background information on OU3;

- a list of key personnel and responsibilities;
- a description of the remedial technologies to be tested;
- DQOs for each test including measurements of performance;
- the experimental procedures for each test;
- a SAP which describes the samples to be collected, sample collection procedures, sampling handling and tracking procedures, a QAPP, and analytical methods;
- a data management plan;
- a health and safety plan; and
- a plan for management of waste generated during the treatability tests.

7.3 Treatability Studies Report

Upon EPA approval of the treatability study work plan, the Respondents shall implement the work plan. Following completion of the treatability study, the Respondents shall analyze and interpret the study results in a technical report submitted to EPA and the State for review and EPA approval in accordance with Section X of the AOC and the schedule contained in the final EPA-approved treatability study work plan. In the report the Respondents shall evaluate the effectiveness, implementability, and cost of each technology and compare test results with predicted results. The Respondents shall also evaluate full-scale application of the technology including a sensitivity analysis identifying key parameters affecting full-scale operation.

8. DETAILED ANALYSIS OF ALTERNATIVES

Upon EPA approval of the Development and Screening of Alternatives Technical Memorandum, the Respondents shall perform a detailed analysis of the remaining remedial alternatives. The detailed analysis shall be sufficient to allow EPA to adequately compare the alternatives, select a remedial action for OU3, and demonstrate satisfaction of the CERCLA statutory remedy selection requirements (§121(b)(1)(A) of the CERCLA).

The Respondents shall assess each alternative against the following seven of the nine evaluation criteria contained in the National Contingency Plan (40 CFR Part 300.430(e) (9) (iii)):

1. Overall protection of human health and the environment
2. Compliance with ARARs
3. Long term effectiveness and permanence
4. Reduction of toxicity, mobility, or volume through treatment
5. Short-term effectiveness
6. Implementability
7. Cost

The Respondents shall conduct the detailed analysis of alternatives by evaluating each alternative against the seven evaluation criteria above and then performing a comparative

analysis between remedial alternatives. That is, each alternative shall be compared against the others using the evaluation criteria as a basis of comparison.

9. FEASIBILITY STUDY REPORT

The Respondents shall prepare a draft FS report that summarizes the development and screening of remedial alternatives and the detailed analysis of alternatives. Identification and selection of the preferred alternative are reserved by EPA in consultation with the State. The Respondents shall refer to the "Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA" (OSWER Directive 9355.3-01, October 1988) for an outline of the FS report and the required report content. The Respondents shall submit the draft FS report to EPA and the State for review and EPA approval in accordance with Section X of the AOC and the schedule contained in Section 10 of this SOW.

10. SCHEDULE OF DELIVERABLES

The Respondents shall deliver documents and perform activities described in this SOW in accordance with the following schedule:

SOW REFERENCE	DOCUMENT OR ACTIVITY	DELIVERY DATE
Section 3.1	Provide existing information	30 days after signing AOC and thereafter, 2 weeks after becoming aware of new information
Section 3.2	Conduct field visit	Not later than 45 days after signing AOC
Section 3.2	Notification of field visit	2 weeks prior to field visit
Section 4	Community relations support	As requested by EPA
Section 5.1	Health and Safety Plan	2 weeks prior to field visit
Section 5.1	Health and Safety Plan updates necessary for SAP implementation	30 days prior to start of field work
Section 5.1	Written description of data security system	30 days prior to start of field work
Section 5.2	Summary Reports for each phase of sampling	As specified in EPA-approved final SAP for that phase
Section 5.3	Draft RI Report	90 days after field work is complete for final phase of sampling
Section 5.3	Final RI Report	45 days after receiving EPA and State comments on draft RI Report
Section 6.5	Draft Development and Screening of Alternatives Technical	60 days after receiving final remedial action objectives

	Memorandum	from EPA
SOW REFERENCE	DOCUMENT OR ACTIVITY	DELIVERY DATE
Section 6.5	Final Development and Screening of Alternatives Technical Memorandum	45 days after receiving EPA and State comments on draft Technical Memorandum
Section 7.1	Draft Treatability Studies Letter Report	30 days after receiving final remedial action objectives from EPA
Section 7.1	Final Treatability Studies Letter Report	30 days after receiving EPA and State comments on draft Letter Report
Section 7.2	Draft Treatability Studies Work Plan	30 days after receiving notice from EPA that treatability studies are required
Section 7.2	Final Treatability Studies Work Plan	30 days after receiving EPA and State comments on draft Work Plan
Section 7.3	Draft Treatability Studies Technical Report	As specified in EPA-approved final Treatability Studies Work Plan
Section 7.3	Final Treatability Studies Technical Report	30 days after receiving EPA and State comments on draft Technical Report
Section 9	Draft FS Report	60 days after EPA approval of final Development and Screening of Alternatives Technical Memorandum or final Treatability Studies Technical Report, whichever is later
Section 9	Final FS Report	30 days after receiving EPA and State comments on draft FS report

ATTACHMENT A
List of Guidance Documents

Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA. OSWER Directive 9355.3-01

Clarifying Cleanup Goals and Identification of New Assessment Tools for Evaluating Asbestos at Superfund Cleanups. OSWER No. 9345.4-05

A Guide to Developing and Documenting Cost Estimates during the Feasibility Study. EPA 540-R-D0-002, OSWER No. 9355.0-75

CERCLA Compliance with Other Laws Manual. Part I. Interim Final
EPA 540/G - 89/006, OSWER No. 9234.1-01

CERCLA Compliance with Other Laws Manual: CERCLA Compliance with the CWA and SDWA. OSWER No. 9234.2-06/FS